DNR Prairie Chicken Advisory Committee
Wednesday, November 9th, 2016

Wisconsin Rapids DNR Satellite Center
Hovde Room A & B
473 Griffith Ave.
Wisconsin Rapids, WI 54494

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1) **Review 2016 Spring Lek Surveys**
   a) Goal: provide index to population abundance and changes over time
   b) Objectives: count # of males on identified booming grounds; determine relative distribution and presence/absence on breeding grounds
   c) Scout prior to and during peak breeding on clear, calm mornings. Minimum of 3 counts per ground with a GPS location taken.
   d) In 2016, 36 grounds detected (pretty stable). The number of grounds per wildlife area has been stable over the past 5 years with the exception of Leola.
   e) The number of males appears stable from last year to this year (although it is an inference over a short time frame).
2) **Research Update**
   a) Background: A PHD student from UW Madison, Mike Hardy, is conducting research on greater prairie chickens in Wisconsin. Much of the focus so far has been a point count approach to create a Point-based Population Viability Analysis. This model will look at census data for each of the four properties in the state with prairie chickens and calculate population growth. It is useful for examining past trends and will give us a road map for where to go in the future as more complex models continue to be built.
   b) Survey trends are useful, but they cannot estimate risk of extinction or quasi-extinction of individual populations. Population models have tried to simulate future growth, starting at the current population size and calculating mean growth, variation in growth rate, carrying capacity, etc. These simulations are run multiple times (upwards of 10,000) to get an average. From that we can get confidence intervals and predict the probability of quasi-extinction (average outcome, best-case scenario, and worst-case scenario).
   c) On our two larger properties, Buena Vista (BV) and Paul Olson (PO), if we do not do anything different from current practices, there is a low risk of extinction. At Leola and Mead, there is a pretty good chance that eventually those populations will die out.
   d) What is the state of the Central WI Grassland Conservation Area? We will still have birds; we are just trying to figure out to what extent. We will still have at least 1 property, but more than likely both BV and PO will retain birds into the future. What if either of those was lost? The research is now exploring the results of different translocation scenarios. Earlier efforts delay risk, increasing long-term viability. Multiple events are better than 1 event. Location is very important; putting birds at our more vulnerable properties would have a bigger impact. We are using a 50-year timeframe. The further into the future the model goes, the harder it is to predict persistence.
   e) We are using historical data going back to the 1950's. Some of those years look really rosy. These estimates are somewhat optimistic because of these boom years, and the recommendation is we only use data from the past 20 years (vortex modeling; rates of

nesting success) that are not quite as variable as the long-term historical records. If we only looked at the past 20 years, our probability of extinction would be much higher. Part of the reason we are using the estimates from the 1950's and 60's is to get a better idea of carrying capacity; those numbers tell us what the population COULD do, but landcover has changed so much since then.

f) Land cover change and lek counts: The research is looking at the correlation between landcover and lek counts. The data layer being used is updated on an annual basis (CropScape). We are looking at changes on each of the properties and within a 3-km buffer. Corn has become somewhat more prominent on the landscape. Statistically-significant increases have occurred at BV, on and around PO, and in the CWGCA as a whole. These increases appear to coincide with declines in dancing male counts (the trends line up really well). Not only are grassy patches disappearing, the largest patches are also getting smaller. LPI (largest patch index) also seems to be declining in the buffers surrounding the focal sites and the CWGCA. Reduction of LPI at Mead and PO has also been significant, and the rate of change appears to be greater on-site than off-site. Row crops have become much more prominent since 2003. Tree cover has been increasing across the entire landscape since 2003. We cannot cover cranberries in this analysis because only a handful show up on CropScape. Relative to everything else, cranberries are a minimal part of the landscape, *in terms of relationship to point counts*. Cranberry bogs will be taken into account during the demographic matrix modeling.

g) Land cover effects on lek counts and growth rates: only 1 competitive model fell out; the percentage of cropland on property, the percentage of small grains within the buffer, and the percentage of trees on property all fit the data the best. Lek counts were negatively associated with percent cover of trees and row crops on site. Conversely, lek counts were higher when there was a greater proportion of small grains in the buffer surrounding the focal site. Recall that tree cover and row crops have both been increasing since 2003 concurrent with observed declines in lek counts. Growth rates were most strongly associated with characteristics of the surrounding landscape rather than onsite features. Growth rates were lower when larger patches of alfalfa were present nearby and higher when larger patches of non-alfalfa hay/grass were found in the buffer.

h) Management practices from 1981-2015
   i) Management records from WDNR field staff
      (1) BV: 1981-2015
      (2) Leola: 1995-2015
      (3) PO: 2006-2010, 2013-2015
   ii) Subset of management practices: brush/tree removal, burning, grazing, hay cutting/mowing, spraying, plow/disk/idle, "Potter-style" grazing
   iii) Substantial increase in brush/tree removal at BV since 1981; apparent declines at other sites. Prescribed burning has declined at BV and LE over the years. This seems to coincide with the observed decline in lek counts at those sites. Conventional grazing efforts have held steady at BV since 1981, but decreased at LE. Hay-cutting and mowing do not show any clear trends. There has been a slight increase in spraying at BV. Nothing very obvious for Potter-style grazing. These trends were fit into some models as best as possible. Intermediate levels of prescribed burning are associated with the highest predicted lek counts. All else being equal, higher dancing

male counts can be expected at intermediate levels of burning. Spraying during the previous year appears to have a negative effect on lek counts.

i) Trends reflect what has occurred across much of the US. Big picture results are generally valid. Cranberries and shrubs are extremely messy and small sample sizes, so they were not a large part of the modeling. There have been changes to CropScape since 2003. The management models generally do not perform as well as the landcover models, especially with fewer data points for some practices. Landcover and management practices will likely come out stronger in demographic models. Is it possible to find landcover data prior to 2003? It seems like the early 2000s are where the most reliable spatial layers begin. The majority of the point count work is wrapping up, and the projection matrix/demographic modeling is getting started. The various aspects of GRPC biology (nesting success, chick survival, and predation) will be analyzed and put into a model, incorporating management practices and landcover changes. This will be a female-only model since we suspect females are the ones driving the population(s). Tons of data related to vital rates has been collected, not only from Wisconsin although that is the main focus. There will be gaps that need to be filled in from the peer-reviewed literature. The projection matrix will use both catastrophe and bonanza years to get an average, and will make deterministic projections about low, high, and average growth rates and determine a stable age distribution. Finally, sensitivity and elasticity analyses will be run to see which vital rates management should be focusing on.

3) Review Timeline for GRPC Plan Revision

a) The timeline is a living document and has been adapted as we go along. The 2004 plan was focused on management. When we started our update, the species was not doing well, so we questioned whether we should focus on a recovery plan instead. Looking at those recovery plans, they often provide a population goal that defines delisting/down-listing. We were discouraged from picking a magic number, there was no support for a number in the models. Instead, we should focus on managing risk and lower the risk of extinction. We just want to ensure persistence. Our thinking has changed with that guidance. We have not discarded the idea of a recovery plan, or how we can articulate success, but we are working on it.

b) We are going to do some targeted landowner outreach next month. Then, we will hold more public scoping meetings to gather public input and factor it into the models/plan. From there, we go into internal review and public review, which can take several months, so it will be the middle of 2017 before we can present a final draft. Our ultimate timeline is approval/finality toward the end of next year. Copies of this timeline will be distributed to committee members. Yes – this is a very ambitious timeline! Originally, we were aiming to get everything done within the span of a year at the request of an NRB number, but our expectations have changed since then.

4) Review GRPC Plan Outline

a) We had to decide how we want this plan to look. Do we want something similar to the turkey plan, with a fairly extensive overview of species biology and population dynamics? Yes; we want something that is informative for the public. Our background will not be exhaustive; we are not trying to reinvent the wheel, just summarize work that has already been done. The conservation and management sections will be the meat of our plan. What do we want to accomplish? How are we going to accomplish it?

b) Are we going to summarize the goals and accomplishments of the 2004 plan? Yes. We will talk about what we accomplished, and what has changed since then, in order to provide context for this plan. Will we evaluate how successful that plan was? Yes. We want to make sure we talk about the success (or lack thereof) of the translocations. Genetically, we may have done some good, but the boost in population numbers did not last. Over 110 females were translocated to the area. Translocation by itself will not move the needle; we need ongoing management efforts at the same time. There is no one magic bullet.

5) Summary of Plan Writing Progress to Date

a) The background sections of the plan are close to finished. It has been a lot of work as the previous plan did not include any of this information. It is a lot of work to go through other publications and compile information without getting exhaustive. The property managers are contributing management practice information to populate that section. Luckily, we can make a lot of references to things that have already been published.

b) The meat of the plan, the second section, is pretty sparse at the moment because we are waiting on the research and modeling results, along with the public input information. A lot of it will also come from the public outreach that we have yet to do. Where are we going to summarize the management that has already done? That information likely fall within the current management section as context. If things have changed significantly, the property managers will let us know. This is what we do, this is when and how, these are the benefits – they have avoided numbers & acres up to this point except where things have changed. They want to avoid heavy data dumps. It will also full under the summary of the old plan – what was projected to happen and what actually happened. Land acquisition is one of those things; the old plan recommended a level we were not able to achieve. There is value in talking about what has occurred in terms of actual management, not just acquisition. It gives some context to how much management was applied, and maybe that would lead to discussion about why certain actions did not take place, and what we can do to ensure they do take place in the future. We have records of management actions, right? Definitely.

6) Discuss Plans for Outreach And Management Alternatives

a) What are committee members' reactions to the proposed alternatives?

i) Budget: are we getting directives to reduce costs? Not necessarily; we are just throwing alternatives out there. We looked at what we thought was reasonable/realistic. Was the primary driver for each alternative cost/budget? No. It is one consideration. Is it the primary consideration for this alternative? If the models tell us that we have a high probability of persistence at our two core properties without doing anything different, we will be asked why we do not just focus on those properties and save money. We need to make sure that we explain that cost is not our primary driver. Otherwise, why care about chickens in the first place. Lek surveys should be continued; how much could they really cost; is it a personnel and time issue more than cost? Maybe we could get volunteers to run the surveys. These surveys have been going on for decades; we need to keep up the survey efforts so we know when the property/subpopulations DO wink out. Continuity of data is a big concern.

ii) When will prairie chickens be considered state endangered? It probably already at this point; there just has not been a status review. From a practical standpoint, the

treatment or management for prairie chickens will not change under the state endangered species law (particularly on private land). A federal listing would definitely affect us, though. Add a note about the effects on other species within the CWGCA (grassland obligates, even the vegetation and soil could be impacted if our management practices change). It should be stated that Leola and Mead will likely go extinct; but there may enough grass at Leola that birds might move on their own from BV, sustaining the population.

iii) Basic treatment: Doing exactly what we're already doing with no changes. All of our alternatives have to make strides toward accomplishing the goals/objectives for the plan, right? We need to explicitly state how close each alternative will get us to our definition of success. If success is persistence of GRPC in Wisconsin, each alternative will get us there. We aren't yet in a position to define success. The science is still figuring out the best direction to take. It is important not to take the cheapest route. That's not what we're trying to do; BUT, the public and the NRB will be telling us how much they're comfortable spending, and we need to take their guidance. When we go to the public, are we going to keep using the CWGCA when we're only talking about a small corner of the whole thing? When the boundary of the CWGCA was formed, one of the alternatives had a much smaller boundary. The basis for the CWGCA was originally land acquisition. When we go to the public, we shouldn't even bring up the CWGCA. Just focus on the four properties we're talking about. We haven't detected birds outside those properties since 2010. Are we not going to consider acquisition at all in the new plan? It's tough to say that we'd have any resources through stewardship under the current climate. We can still do easements or FBB programs (a lot of which are tied to the CWGCA, so we don't want to completely eliminate the boundary).

iv) Premium treatment: Why we are calculating the return on investment for this scenario, but not the first two? It's more that we'd start calculating return on ADDED investment at this point. This is the first model where we're actually investing something. For the first one, we're divesting, and for the second one, there's no change from what we're currently doing. If we increase our investment, do we get more chickens on the landscape? Still, it would be a good metric to calculate the ROI for all alternatives, because we're still making investments in all scenarios. That could be an argument against the first two, honestly. We're investing and the population is still going down. We aren't going to use the 75% figure because it can't be extrapolated easily to the other scenarios.

v) Deluxe treatment: How do partnerships change between Premium and Deluxe? For Premium, it's a bit more passive. We leverage funding for existing programs. Under Deluxe, we're investing resources into a new landscape initiative from multiple agencies to bolster grasslands on the landscape. Would the plan explicitly describe these alternatives? No, we couldn't get the descriptions that specific. We would have to use more of a broad brush. These four alternatives are pretty good in terms of their range. We don't need additional alternatives; it would just get too confusing. The modeling that's been done so far suggests that we need more grassland, given the tight correlation with decline over the past 20 years. Brood survival is also very important, and hit is sure to come up in the sensitivity analysis. Given that information, intensive work should be done to increase grasslands and brood survival,

and see how it works on BV. If it has an effect, expand into bigger areas as much as we're able. We've been trying different things over time (like translocation), but the birds still seem to be going downhill, and the data shows that it's because of the grasslands and brood survival. Efforts should be focused on the biology of the bird, rather than the property. The model and survey results give us justification, but that's only one direction for the public to comment on, instead of four. We know we can't pursue all of these alternatives, so we're trying to get feedback so we can define the preferred alternative which we will put in the final plan (along with an analysis of the other alternatives we considered and why we ultimately decided not to pursue them). Translocation should not be the first move, especially if our habitat isn't improving drastically; we tried that and it didn't work. Could we try different combinations of the management actions that the modeling nominates? Yes, we can actually work that into the alternatives we already have, especially once we have the full results from the modeling efforts. We know our stakeholders aren't all going to agree.

b) What questions or comments might we receive from the public?
    i) One of our board members wants us to reach out specifically to folks with varying opinions about chicken management, primarily agricultural producers. Thankfully, Aaron Thompson was able to help us with this project. He's a social scientist so it's right up his alley. He has developed some questions and criteria and a format for the forum we'll hold. He thinks small, 5-8 landowner focus groups will be most useful. These landowners will receive personalized invitations. They'll have been in the area for a while, so they'll be familiar with the challenges. We want a variety of opinions, both positive and negatives. We'll do it in early December. One focus group at PJO, one at BV. We'll collect some background information and then jump into the CWGCA overview and feedback. This is the first bit of outreach that we'll do, which is why it's so focused and targeted. We'll open it up to the general public once we've had a chance to develop our goals and alternatives more. Our target for wider public outreach is January. How will we use the information from the focus groups? Are we going to use it in the plan? It's something we were asked to do by the NRB, and we do think it will inform the plan, and help us anticipate reactions. We want to make sure our phrasing is adjusted for maximum acceptance. Do not ask them what they think are the causes of prairie chicken decline, it makes it seem like the DNR does not have their act together, because we should really know the causes by now. We're supposed to be telling the landowner what's going on, especially with all this research we've done. This all came about because one of our board members toured the property, at the request of a landowner, and he wants to know why the locals disagree so much with the DNR. The property managers will choose the invitees.
    ii) Where does the advisory committee fit into the rest of the timeline? This committee will provide comments on the draft plan, once we have one. The committee should meet before the plan goes to the NRB. If comments on the digital plan remain editorial, we may not need to meet in person. If comments are a bit more controversial, we'll want the chance to discuss in person. It will go to the WSO since they are represented on their conservation committee. The committee's purpose is to be a resource and sounding board, after all, and all of these people are vested in the species itself. They want the chance to provide input and guidance.
c) How acceptable is each alternative to committee members?

i) Lowell wants the deluxe alternative. Of course, we all do, but we need to figure out how to present it better. We know we're missing a lot of the data that will provide the bones. We haven't defined success yet. Peter thinks we should focus on the model results, because they provide rational for what we're doing instead of saying we'll try a bunch of different things and see what sticks. We need well-defined relationships between actions and results. Lowell wanted to see that today, but we're not there yet. We're waiting on the results of Mike's modeling work. We need to figure out what's actually feasible. Can we ever get back to where we were?
ii) We're already at quasi-extinction at Mead and Leola. We're already scraping the bottom of the barrel at two of our properties. Is there a number we can shoot for at those properties to get us persistence? We have talked about getting numbers from Mike and Ben; we may need to press them a little more. Even a range is OK. And we don't just want a number – we want a stable number. Having a max of 100 birds that veers up and down wildly from year to year isn't necessarily more attractive than a population that stays consistently at 50 birds.
iii) What kind of goals does the committee wants to see within the plan? It's yet to be determined, so additional perspectives are helpful. And we want to make sure the public can digest whatever we bring to them. What do we want besides keeping chickens in WI? If we do nothing different (or even slightly less than we're currently doing), we're set in that sense for the next 50 years. But is that enough? Do we want more chickens? A hunting season? The answer varies depending on who we ask. Some people will start by asking how much it will cost. The public can understand and support brood survival, so maybe we can make that metric one of our focuses. Brood habitat is important, but the public might have a different definition. A lot of the locals (when we kept removing their deer hunting land) spoke negatively about clearing land to make more nesting habitat. So, while we need more and better brood habitat, it'll be tough to sell to the layman. If it can be demonstrated on a small area that a certain management scheme works, the public has an easier time digesting and accepting it. Can't we show them the maps of where radio-collared hens nested? No, because the public will think the birds are where we wanted them (not where the birds wanted to be).

7) Partner updates
   a) none
8) Public comments
   a) none